ENGINEERING
TOMORROW

TP5000 Si Range

Electronic Programmable Thermostats now with **additional features**

- Mains Powered Versions
- Service Interval Function
- Factory Set Clock
- Automatic BST/GMT Time Change
- Stylish modern design
- Large easy to read LCD display
- Easy to programme and operate
- Available in hard-wired, wireless and remote sensor versions
- Battery powered versions for ease of installation
- Many additional advanced features

www.heating.danfoss.co.uk

TP5000 Si Range

Electronic Programmable Thermostats

The TP5000 Si is an easy to install-and-use 5/2 day programmable room thermostat which offers up to six time and temperature changes each day with different programmes for weekdays and weekends. However the TP5000 Si goes far beyond this. Mains or battery powered for ease of installation, the TP5000 Si has a large, easy-to-read LCD display. It is easy to programme and operate because of a built-in switching programme that the user can easily change to suit individual heating requirements. The TP5000 Si is also available in battery powered, hard-wired and wireless (RF) versions. A big plus with the TP5000 Si is that it incorporates a real time clock and calendar function which eliminates the need for time-setting and BST/GMT time changes. Time and date are factory-set making time setting or adjustment unnecessary.

Chrono-proportional control is the standard setting for the TP5000 Si but advanced conventional ON/OFF control is an installer-set option. This modulating control mode uses a cycling pattern within which boiler on/off percentages are varied to satisfy heating requirements.

Chrono-proportional cycling rates of 3, 6, 9 or 12 per hour can be selected.

Service Interval function

The optional Service Interval function incorporated into the TP5000 Si helps landlords meet the boiler servicing requirements of Gas Safety Regulation 36. The unit provides audible and visual warnings from 28 days before servicing is due and ultimately reduces the heating output should the due date pass. Full heating operation can only be restored by an authorised installer.

TP5000-RF Si & RX1 Receiver 087N791400

Other features

Some other features of the TP5000 Si are:

- *Mains, battery-powered hard-wired and RF versions.*
- *Selectable 6, 4 or 2 events per day.*
- *Programmable remote sensor inputs including remote room sensing, limit sensing for floor heating applications and tele-switch or window switch sensing.*
- *Selectable operating modes 5/2 day, 24 hour or A/B block programming.*
- *Fixed time, delayed start or optimum start options.*
- *All user settings, including overrides, stored in non-volatile memory independent of battery state.*
- *Thermostat mode and frost protection.*

Hard-wired versions	**TP5000 Si**	**TP5000A Si**	**TP5000M Si**	**TP5000MA Si** [3][4]
Code No.	087N791000	087N791100	087N791700	087N791800
Wireless versions	**TP5000-RF Si**	**TP5000A-RF Si**	**-**	**-**
Code No. without receiver	087N791200	087N791300	-	-
Code No. for set c/w single channel receiver	087N791400	-	-	-
Programmable 5/2 day operation	•	•	•	•
Number of events per day	6, 4 or 2		6, 4 or 2	
Temperature range	Off, 5-30°C		Off, 5-30°C	
Clock display	24 hour	24 hour	24 hour	24 hour
Factory pre-set programmes	Yes		Yes	
Room temperature override	Yes	Adjustable	Yes	Adjustable
Display time or temperature option	Yes		Yes	
Thermostat mode & frost protection	Yes		Yes	
Weekend into weekday override	Yes		Yes	
Chrono-proportional or on/off control option	Yes		Yes	
Power supply, thermostats	2 x AA/MN1500/LR6 alkaline batteries [1]		230Vac, 50Hz	
Maximum ambient temperature	45°C		45°C	
Contact type and rating (hard-wired models)	10-230 Vac, 3(1)A		10-230 Vac, 3(1)A	
Transmitter/receiver frequency (RF models)	433.92 MHz		-	-
Transmitter range (RF models)	30 metres max. [2]		-	-
Dimensions (mm)	110 wide x 88 high x 28 deep		110 wide x 88 high x 28 deep	

Notes:
(1) Memory is retained for life of the product in non-volatile memory.
(2) Please ensure there are no large metal objects between thermostat and receiver as these will interfere with radio signal.
(3) Can be configured by installer for remote temperature sensor, limit sensor, window contact or telephone activated switch contact.
(4) Remote sensor is supplied as an acessory, if remote room sensor is required order TS2 sensor, code 087N681100

Receivers (RF models)	**RX-1**	**RX-2**	**RX-2C**	**RX-3**
Code No.	087N747600	087N747700	087N747900	087N747800
Number of zones receiver covers	1	2	2	3
Power supply (receivers)	230 Vac, ±15%, 50/60 Hz			
Contact details	1-SPDT	1-SPDT, 1-SPST	2-SPDT	1-SPDT, 2-SPST
Contact rating	10-230 Vac, 3(1)A			
Dimensions (mm)	138 wide x 88 high x 32 deep			

TP5000 Si Range

Fit Chrono Poroportional Controls and save costs

If a property has a mechanical thermostat installed, then the energy-saving benefits of a replacement high-efficiency condensing boiler will not be realised as the boiler will rarely be running in condensing mode. Switching to an on/off electronic room thermostat produces reductions of over 2% in both energy cost and carbon emissions.

Use of an electronic thermostat with chrono-proportional capability provides closer temperature control plus possible reductions of 10% in both fuel cost and carbon emissions *(see fig.1)*. These results are from tests using Danfoss controls. Tests carried out with other manufacturers' on/off controls produced similar figures.

With a condensing gas boiler Chrono-6 also has the benefit of ensuring the boiler remains in condensing mode more often than might be achieved with a more basic on/off mode of operation. This occurs due to the faster reaction rate ensuring the returned water maintains the boiler in condensing mode over more of it's operating cycle, even at low heat loads.

With slower reacting controls the water can cool in the system too much and hence require full circulation before the condensing cycle is functional and with a low load this might actually not occur, hence a condensing boiler might only give the performance on a non-condensing type when in low load with a slow control.

Energy Savings

In tests at Danfoss Randall we have observed energy savings of over 10% on a weekend profile and over 6% on a week-day (2-heating period or "bi-modal") profile when running a system with a chrono-proportional control rather than a mechanical thermostat.

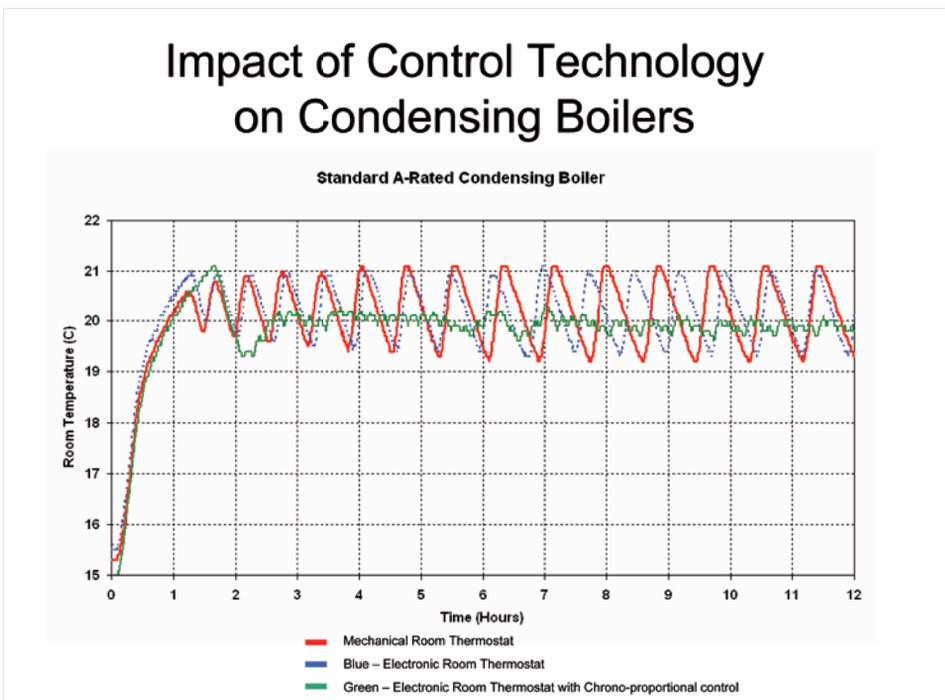
Conclusions

Changing the boiler alone from non-condensing to condensing in a domestic central heating system will not necessarily optimise potential energy and carbon emission savings. An electronic room temperature control, preferably with chrono-proportional capability, is often needed to make the cost of replacing the boiler worthwhile.

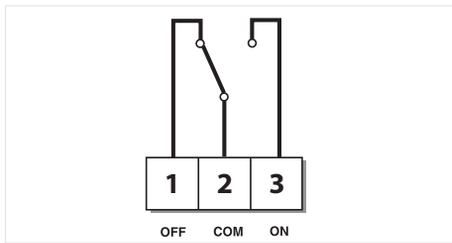
Source: Danfoss Randall Ltd. test laboratory 2007

Figure 1

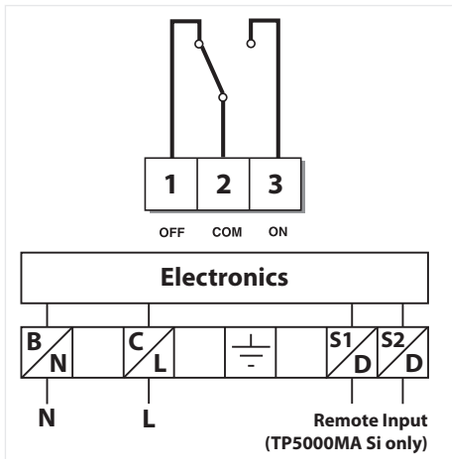
Control	Energy Cost (£)	Energy Saving (%)	Carbon Emissions (kg CO˙)	Carbon Saving (%)
Mechanical On/Off	**2.39**	**-**	**13.56**	**-**
Electronic On/Off	**2.34**	**2.10**	**13.25**	**2.31**
Chrono- Proportional	**2.14**	**10.35**	**12.11**	**10.71**



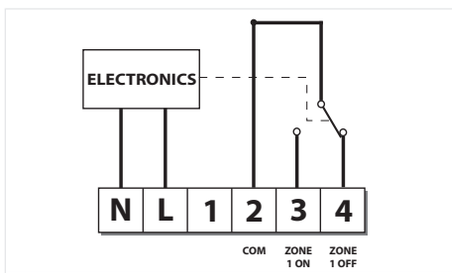
Wiring Details



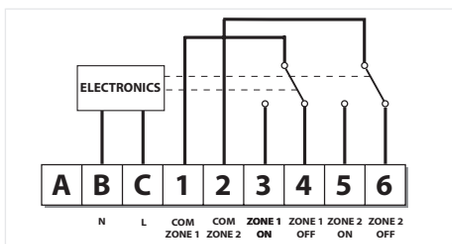
TP5000 Si



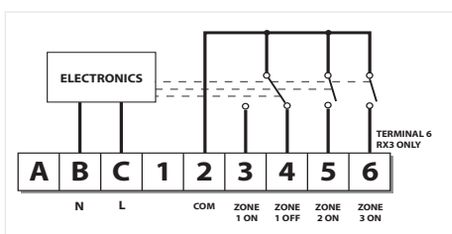
TP5000M Si



RX1



RX2-C



RX2 and RX3

ENGINEERING TOMORROW

Literature Service

Product Range	Type	Part No.	Quantity
Product Selection Guide	Catalogue	028	
Wireless Control Packs	Catalogue	662	
Underfloor Heating Product & System Guide	Catalogue	438	
RA2000 Commercial Radiator Thermostats	Catalogue	410	
Radiator Thermostats			
RAS-C² Revolver Radiator Thermostats, incl. push-fit versions	Sales Leaflet*	250	
RAS-D² Domestic Revolver Radiator Thermostats, incl. push-fit versions	Sales Leaflet*	336	
RA2000 Commercial Radiator Sensors	Datasheet	VDVBE122	
RA Plus Programmable Radiator Thermostats	Datasheet	VD53P102	
RA-FN, RA-G Commercial Valve Bodies	Datasheet	VD51Q102	
RA-N Commercial Valve Bodies	Datasheet	VD51G802	
RLV-D Domestic Lockshield Valves, including push-fit versions	Datasheet	VD35E202	
RLV Commercial Lockshield Valves	Datasheet	VD35D102	
H Pieces & Sensors	Datasheet	VD35C102	
Bathroom Solutions - RA-URX Towel Rail	Sales Leaflet	580	
Bathroom Solutions - RA-URX Towel Rail	Datasheet	VD31B102	
Replacement Sensors RA-V & RA-VL	Datasheet	VDULY102	
Time Controls			
Time Controls - TS715 Si, CP715 Si & FP715 Si	Sales Leaflet	334	
Time Controls, Compatibility Guide	Sales Leaflet	196	
TS975 & FP975 Replacement Time Controls	Datasheet	208	
GP Time Controls - 102, 102E5, 102E7, 103, 103E5 & 103E7	Sales Leaflet	582	
Set Range - SET1E, SET2E, SET3E & SET3M	Sales Leaflet	188	
Programmers - 3020P, 3060 & 4033	Datasheet	040	
Commercial Time Controls	Sales Leaflet	606	
Electric Thermostats			
TP4000 Programmable Room Thermostat	Sales Leaflet	238	
TP5000 Si including RF versions	Sales Leaflet*	296	
TP7000 Programmable Room Thermostats	Sales Leaflet*	594	
HC6000 Heat/Cool Thermostats	Sales Leaflet*	596	
TP9 Programmable Thermostat with Hot Water Time Control	Datasheet	318	
Programmable Hot Water Thermostat - WP75RF	Sales Leaflet*	282	
RMT/RET Room Thermostats	Sales Leaflet*	584	
RET Electronic Room Thermostats with Function Switches	Sales Leaflet*	592	
RET230 HC & HCW Heat/Cool Thermostats	Datasheet	660	
Battery Room Thermostats RET B plus RF versions	Sales Leaflet*	588	
RET-MD & RET-M Room Thermostats	Sales Leaflet*	590	
Cylinder, Pipe & Frost Thermsotats - ATC, ATP, ATF & RET230F	Datasheet	374	
Immersion Thermostats - ITC, ITL & ITD	Datasheet	374	
Underfloor Heating Controls			
Underfloor Heating Product & System Guide	Catalogue	438	
Electric Underfloor Heating Mat	Sales Leaflet*	628	
FH-WC Hard Wired Zone Control	Datasheet	620	
FH-BU Wireless Zone Control	Datasheet	622	
FHV Valves for Underfloor Heating	Sales Leaflet*	476	
Thermal Actuators TWA	Datasheet	VDSAP112	
Motorised Valves & Other Controls			
Control Packs	Sales Leaflet*	120	
Wiring Centre WC4B	Instructions	39917	
Wireless Controls Packs WP75-RF	Datasheet	408	
H Series Motorised Valves	Sales Leaflet*	192	
Domestic Bypass Valves AVDO	Datasheet	062	
Domestic Bypass Valves ARV22	Datasheet	380	
Thermal Actuators TWA	Datasheet	VDSAP112	
AB-QM Balancing Valves	Datasheet	VDA2W112	
AB-QM Balancing Valves	Sales Leaflet	VBA2Z102	
Thermostatic Cylinder Controls RAVI	Datasheet	240	
Climate Control Range - FEK, FEV & FED	Catalogue	346	

Ordering Literature

To obtain copies of individual product sales leaflets and datasheets please photocopy this page and complete your personal details and the literature quantities you require and fax this form to

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Ireland 1800 930 242

Company Name: _____

Address _____

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Datasheets

* Denotes that datasheets are also available. Please use the space below to indicate which datasheet you would like to order.

Datasheet	Quantity

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